

Work Order ID 142669

Monday, March 21, 2016 11:47:36 AM

142669

Page 1

Item ID: D4148-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Crosstube Lug Plate, Fwd

Start Date: 4/19/2016 Start Qty: 20.00

20

Cust Item ID:

Required Date: 4/21/2016 Req'd Qty: 20.00

20

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D4148	E								

105

0.00

105

Purchasing

Memo

0.00

Purchasing

ISSUE PO 31764
CUT PER DRWG D4148 REV.E20

MAR 21 2016

DAS
13
9-09

115

Receive & Inspect for Damage & Mat'l Certs

0.00

115

Packaging

Memo

0.00

Packaging

20x SP16-01-01

125

QC5- Inspect part completeness to step on W/O

0.00

125

QC

Memo

0.00

Quality Control

20DAS
38
9-09
MAY 11 2016**P.T.O.**

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :	MRB (QSI042) Approval		
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER :					

DQA: dent Date: 2016-10-7

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: QW Date: OCT 03 2016Work Order update only ☐

Work Order: <u>142669</u> Part No. <u>D4148-1</u> NCR No. <u>16-6076</u>	DISPOSITION Rework ☒ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube ☐</td> <td>Cross tube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☒</td> <td></td> </tr> </table>			Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☒																																																	
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Date: <u>16-04-04</u>	Step #: <u>105</u>	QTY Effective: <u>20</u>	MRB (QSI042) Approval																																																																	
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Part was outsource to T.P.I. on P0317764. At inspection some holes where found under size. Ref. to NCR 16-5694		• Re work (drill) holes to drawing. • Fill out F.A.I. sheet		Completed By																																																																
				<u>16-5-6</u>																																																																
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Work Order ID 142669

Monday, March 21, 2016 11:47:36 AM

142669

Page 2

Item ID: D4148-1 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Crosstube Lug Plate, Fwd
Start Date: 4/19/2016 Start Qty: 20.00 ***20*** Cust Item ID:
Required Date: 4/21/2016 Req'd Qty: 20.00 ***20*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	Identify as per dwg & Stock Location: <i>3085</i>	0.00				<i>20</i>	<i>DAG 6 8-09</i>		<i>MAY 12 2016</i>
150									
Packaging	Memo	0.00							
Packaging									
160	QC21- Final Inspection - Work Order Release	0.00							
160									
QC	Memo	0.03				<i>MLJ</i>		<i>MAY 13 2016</i>	
Quality Control									

MLJ *MAY 12 2016*

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Description Work Order Deviation		Disposition			
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
		OTHER : ☐			

Picklist Print

Monday, March 21, 2016 11:47:35 AM

Page 1

Work Order ID: 142669

142669

Parent Item: D4148-1

D4148-1

Parent Item Name: Crosstube Lug Plate, Fwd

Start Date: 4/19/2016

Required Date: 4/21/2016

Start Qty: 20.00

Required Qty: 20.00

Comments:

IPP Rev:A 10.06.24 new issue DD verf:EC

IPP Rev:B 10.10.29 as per revC DD verf:EC

11.03.02 AS PER DWG REV.D DD VERF:EC

IPP REV:C

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D4148-1P		Purchased	No				Each	0.0000		20			
D4148-1P									**				
Crosstube Lug Plate, Fwd													
M304S11GA		Purchased	No			100	sf	121.7250	0.3607	7.593684			
M304S11GA									**				
304/316 0.125 Sheet													

20 x SP/6-CP-01

APR 01 2016

DAS
13
9-89

Location

MAT020

Loc Qty

121.72498

Loc Code

M129545

24.82498

M129972

21.7

M134284

75.2

M134604

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
		OTHER : ☐			

DART AEROSPACE LTD		Work Order: 142669
Description: Fwd Crosstube Lug Plate		Part Number: D4148-1
Inspection Dwg: D4148	Rev: E	Page 1 of 1

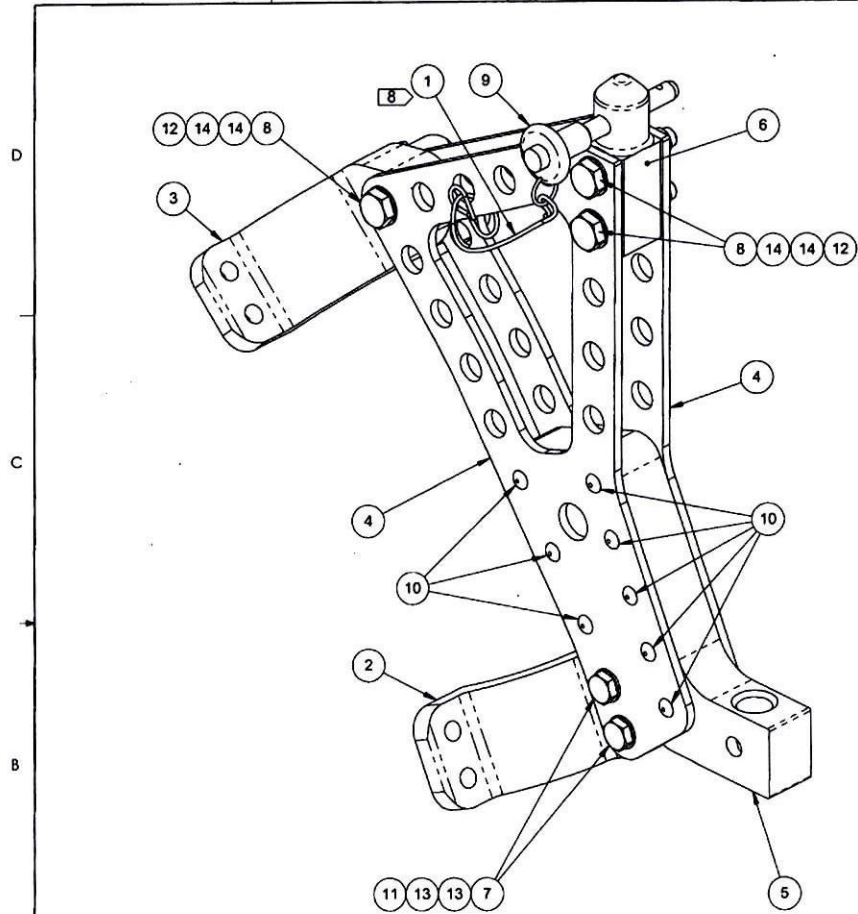
FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.129	+0.005/-0.001	.131	-		D602	
Ø0.191	+0.005/-0.001	.193	-			
Ø0.38	+0.006/-0.001	.380	-			
Ø0.257	+0.006/-0.001	.257	-			
Ø0.50	+0.008/-0.001	.500	-			
0.94	+/-0.030	.94	-			
4.47	+/-0.030	4.47	-			
0.750	+/-0.010	.750	-			
8.47	+/-0.030	8.47	-			
8.096	+/-0.010	8.096	-			
5.43	+/-0.030	5.43	-			
5.197	+/-0.010	5.197	-			
4.733	+/-0.010	4.733	-			
0.310	+/-0.010	.310	-			
0.750	+/-0.010	.750	-			
0.375	+/-0.010	.375	-			
1.84	+/-0.030	1.84	-			
0.92	+/-0.030	.92	-			
3.000	+/-0.010	3.000	-			
0.750	+/-0.010	.750	-			
0.625	+/-0.010	.625	-			
1.982	+/-0.010	1.982	-			
0.991	+/-0.010	.991	-			
0.77	+/-0.030	.77	-			
1.54	+/-0.030	1.54	-			
2.47	+/-0.030	2.47	-			
0.82	+/-0.030	.82	-			
3.57	+/-0.030	3.57	-			
1.23	+/-0.030	1.23	-			
0.73	+/-0.030	.73	-			
0.125	+/-0.010	.125	-			
Ø0.252	+0.003/-0.000	.253	-			

Measured by: AJ	Audited by: PD	Preliminary Approval:
Date: 11-6-06	Date: 11-6-06	Date:

Rev	Date	Change	Revised by	Approved
A	10.08.04	New Issue	KJ	
B	10.10.08	Dwg Rev updated	KJ	
C	10.11.05	Dimensions updated per Dwg Rev C	KJ	
D	11.03.08	Dwg Rev updated	KJ	
E	12.02.01	Dimensions updated per Dwg Rev D	KJ	
F	13.11.26	Dwg Rev updated	KJ	

8 7 6 5 4 3 2 1



D4148-041 FWD X-TUBE LUG ASSY

- NOTES:
- 1) MATERIAL: N/A
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: N/A
 - 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D4148-041" PER DART QSI 044 6.1
 - 7) WEIGHT: 3.66 lbs
 - 8) ATTACH D2690-6 TO D4148-1 BY LOOPING AROUND A LIGHTENING HOLE FIRST AND THEN SECURE TO MS17984-C413

STOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
142669 MJS
16-03-11

ITEM	QTY -041	P/N	DESCRIPTION
	X	D4148-041	FWD X-TUBE LUG ASSY
1	1	D2690-6	LANYARD
2	1	D3910-1	X-TUBE LUG
3	1	D4091-1	MOUNTING LUG
4	2	D4148-1	FWD X-TUBE LUG PLATE
5	1	D4148-3	STUD RECEIVER LOWER
6	1	D4148-5	EYEBOLT STUD
7	2	AN3C12A	BOLT
8	3	AN4C13A	BOLT
9	1	MS17984-C413	PIN, QUICK RELEASE
10	8	MS20615-4M18	RIVET, SOLID, PAN-HEAD
11	2	MS21043C3	NUT, SELF-LOCKING
12	3	MS21043C4	NUT, SELF-LOCKING
13	4	NAS1149C0332R	WASHER
14	6	NAS1149C0432R	WASHER

RELEASED
2013-08-16
MD

E	B6-4 Ø0.286 HOLE ADDED FOR CARGO TUBE INSTALLATIONS.	AJS	13.0
D	HOLE DIA CHANGED TO 0.252" (D6-3); HOLE DIA CHANGED TO 0.250" (C8-5); REPLACED QTY(2) AN3C12A, MS21043C3 AND QTY(4) NAS1149C0332R WITH QTY(2) AN4C13A, MS21043C4 AND QTY(4) NAS1149C0432R (D3-1,C4-2)	SC	11.0
C	REDESIGNED D4148-1/3 TO ADDRESS COMPATIBILITY ISSUES WITH D350-591 SHORT STEPS	MB	10.1
B	REPLACED QTY(3) MS20615-4M18 WITH QTY(2) EACH AN3C12A, MS21043-3 AND QTY(4) NAS1149C0332R WASHER (ZN D3-1, B7-2 & B4-2); MS20615-4M18 WAS MS20615-4M20 (ZN D3-1 & B7-2); Ø0.129 2 PL REPLACES Ø0.129 3 PL (ZN D6-3); Ø0.129 7 PL WAS 10 PL (ZN A7-3); Ø0.191 WAS 0.129 (ZN C8-5); REASON: SEE TR-D350-607-2 REV. B.	MB	10.0
A	NEW ISSUE	MB	10.0
REV.	DESCRIPTION	BY	DA
DESIGN	MB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED	JP	DRAWING NO.	R
MFG. APPR.	JP	D4148	SHEET
APPROVED	JP	TITLE	
DE APPR.	JP	FWD X-TUBE LUG ASSY	
DATE	13.07.22	COPYRIGHT © 2010 BY DART AEROSPACE LTD. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT NOT BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

8 7 6 5 4 3 2 1

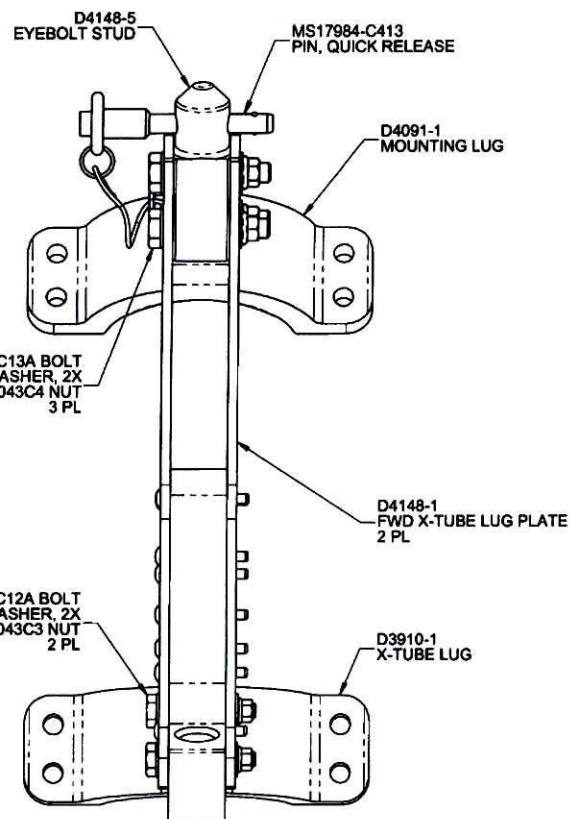
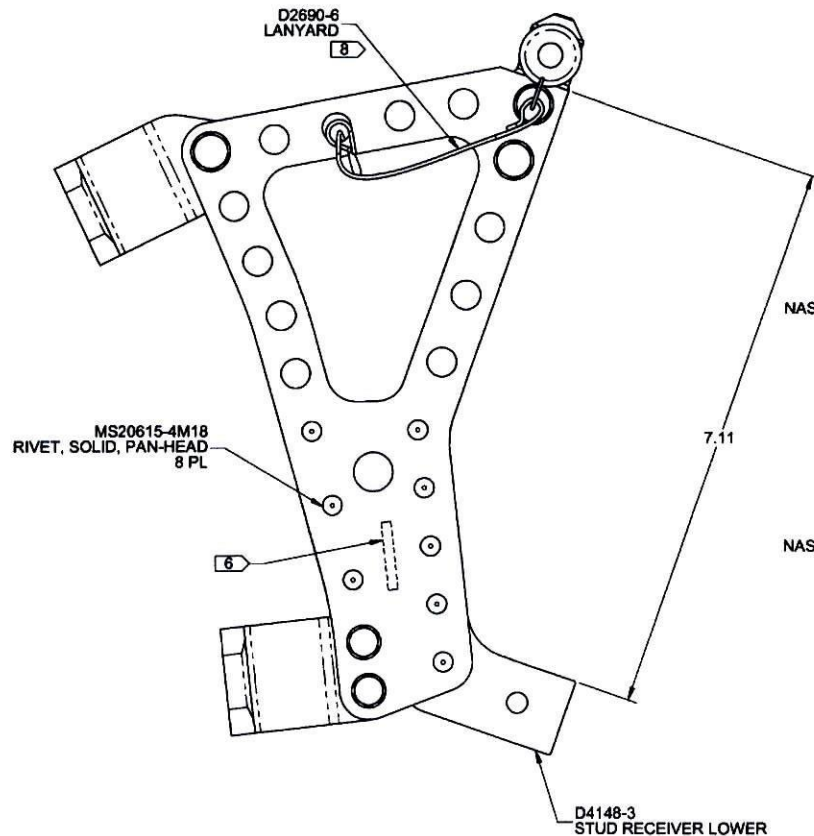
8 7 6 5 4 3 2 1

D

C

B

A

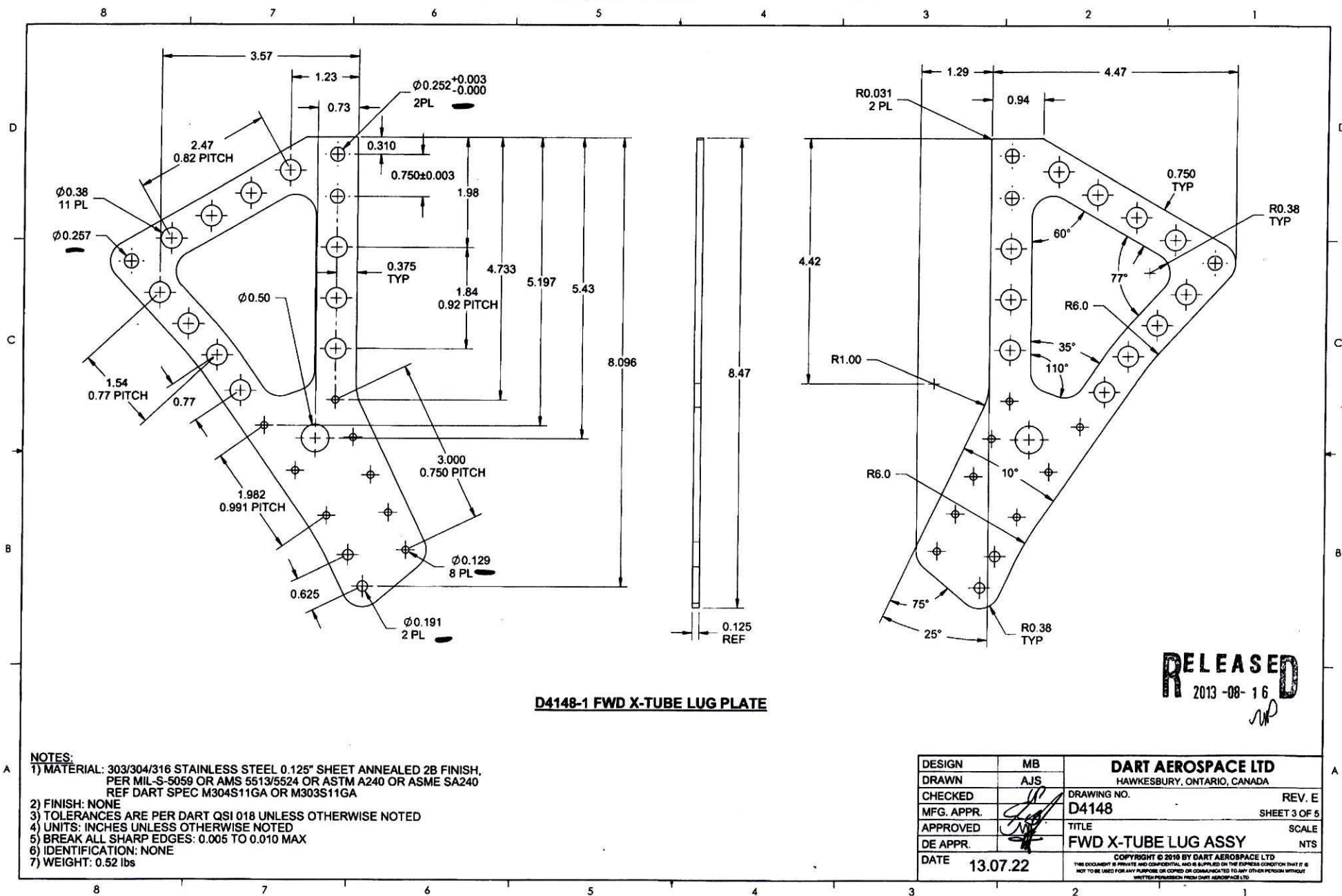


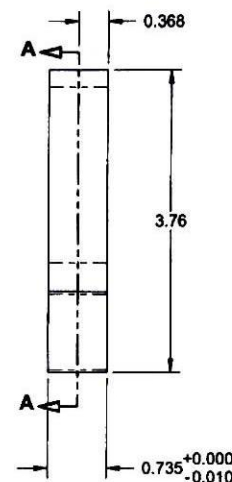
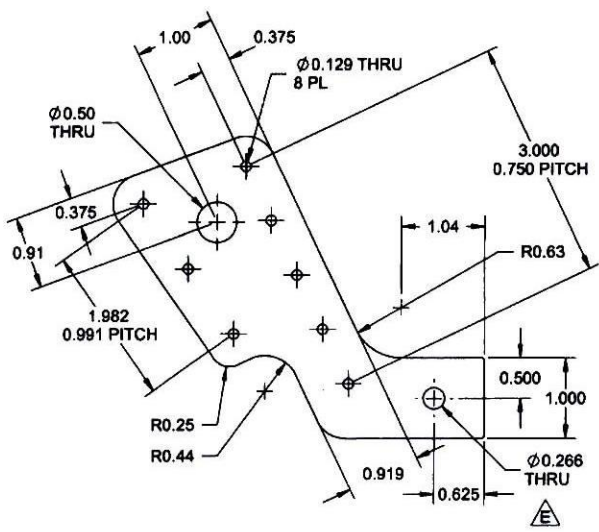
D4148-041 FWD X-TUBE LUG ASSY

RELEASED
2013-08-16

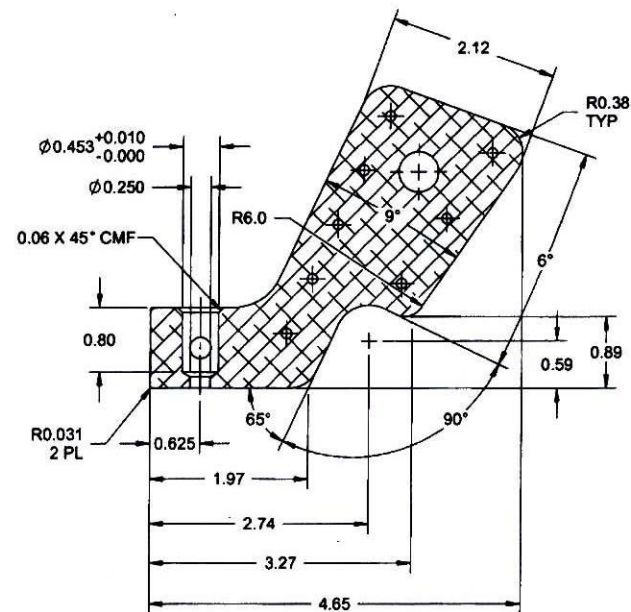
DESIGN	MB	DART AEROSPACE LTD	
DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. E
MFG. APPR.	<i>[Signature]</i>	D4148	SHEET 2 OF 5
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	FWD X-TUBE LUG ASSY	NTS
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8 7 6 5 4 3 2 1

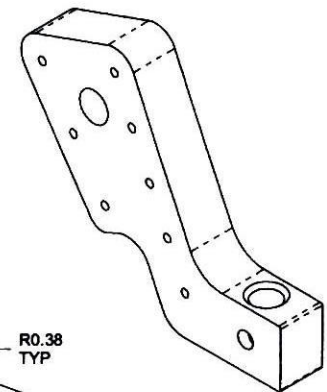




D4148-3 STUD RECEIVER LOWER



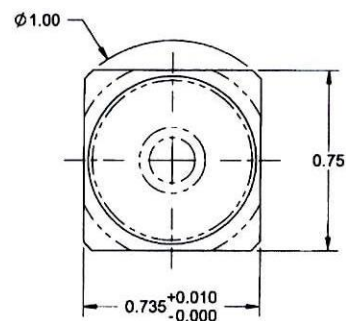
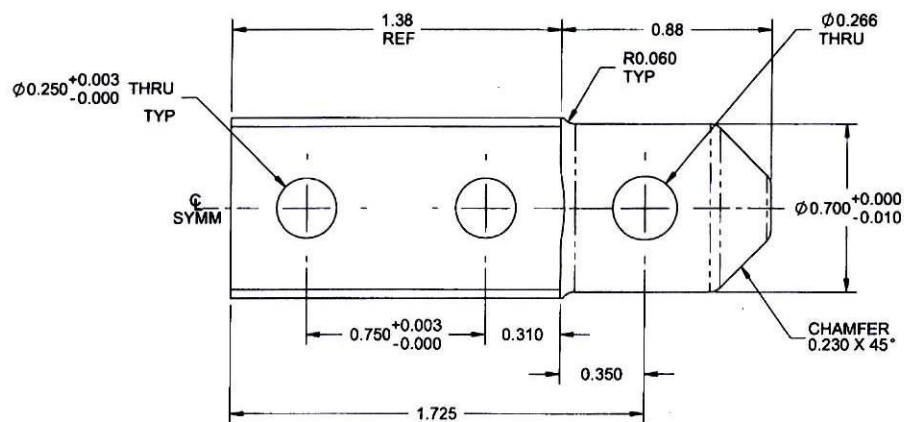
SECTION A-A



- NOTES:**
- 1) MATERIAL: 303/304/316 STAINLESS STEEL BAR PER ASTM A582 OR ASTM A276
REF DART SPEC M304B OR M303B
 - 2) FINISH: NONE
 - 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK ALL SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: NONE
 - 7) WEIGHT: 1.51 lbs

DESIGN	MB	DART AEROSPACE LTD	
DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. E
MFG. APPR.		D4148	SHEET 4 OF 5
APPROVED		TITLE	SCALE
DE APPR.		FWD X-TUBE LUG ASSY	NTS
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RELEASED
2013-08-16



D4148-5 EYEBOLT STUD

RELEASE
2013-08-16

NOTES:

- NOTES:**
 1) MATERIAL: 303/304/316 STAINLESS STEEL BAR PER ASTM A582 OR ASTM A276
 REF DART SPEC M304B OR M303B
 2) FINISH: NONE
 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 5) BREAK ALL SHARP EDGES: 0.005 TO 0.010 MAX
 6) IDENTIFICATION: NONE
 7) WEIGHT: 0.27 lbs

DESIGN	MB	DART AEROSPACE LTD	
DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. E
MFG. APPR.		D4148	SHEET 5 OF 5
APPROVED		TITLE	SCALE
DE APPR.		FWD X-TUBE LUG ASSY	NTS
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Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO31764**

Purchase Order Date 3/21/2016

PO Print Date 3/21/2016

Page Number 8 of 11

Order From :

VC-TPI001

TPI INDUSTRIES INC.
148 RUE GOODFELLOW
DELSON, QUEBEC J5B 1V4
CANADA

Ship To : DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone 450-633-0484

Ship To Contact

Ship To Phone

Ship Via:

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax #

10127-2607

Terms

Net 30

Currency

CAD

FOB

Destination-Collect

Line Total: \$276.00

19 D4021-IP

Handle Plate

4/6/2016

Yes

4/6/2016

14.00

Each

\$4.20

\$58.80

CUT AS PER DWG D4021 REV. B
B142715
MATERIAL 304 SHEET 11 GA

Line Total: \$58.80

20 D4148-IP

Crosstube Lug Plate, Fwd

4/6/2016

Yes

4/6/2016

FN

44.00

Each

\$19.00

\$836.00

CUT AS PER DWG D4148 REV. E
B142669 X 20 PCS
B142817 X 24 PCS
MATERIAL 304 SHEET 11 GA

Line Total: \$836.00

Note:

3/21/2016

SP 16-04-01

T.P.I. INDUSTRIES INC.

148 GOODFELLOW
DELSON, QUÉBEC J5B 1V4
CANADA
Tel: (450) 633-0484
Fax: (450) 633-0879

Packing Slip

Packing Slip No.: 7436
Date: 2016-03-29
Page: 1

Sold to:**Dart Aerospace**

Chantal Lavoie
1270 Aberdeen
Hawkesbury, Ontario K6A 1K7
Canada

Ship to:

Dart Aerospace
Chantal Lavoie
1270 Aberdeen
Hawkesbury, Ontario K6A 1K7
Canada

Order No.: 31764**Sold By:** JONATHAN LESSARD**Shipped By:****Ship Date:** 2016-03-30**Tracking No.:**

Item No.	Unit	Description	Quantity
D2281 ✓		jack saddle ✓	80 ✓
D2585 ✓		latch clamp ✓	65 ✓
D3637-041 ✓		bracket assy ✓	12 ✓
D4060-1 ✓		ski clamp ✓	132 ✓
D4176-1 ✓		429 clamp ✓	8 ✓
d2232-3 ✓	Chaque	d2232-3 basket hinge ✓	15 ✓
d2581 ✓		mounting bracket ✓	68 ✓
D3191-1 → D3198-1 ✓		fitting ✓	10 ✓
D3405-041 ✓		ground handling lug ✓	32 ✓
D3405-043 ✓		ground handling lug ✓	6 ✓
d3561-1 ✓	Chaque	d3561-1 seal insert tool ✓	6 ✓
d3912-5 ✓	Chaque	d3912-5 eyebolt plate ✓	30 ✓
d4021-1 ✓	Chaque	d4021-1 handle plate ✓	14 ✓
d4148-1 ✓	Chaque	d4148-1 crosstube lug plate fwd ✓	20x 44 ✓
d4149-1 ✓	Chaque	d4149-1 crosstube lug plate aft ✓	20 ✓
d4150-3 ✓	Chaque	d4150-3 arm plate ✓	8 ✓
d4151-1 ✓	Chaque	d4151-1 lower hardpoint plate ✓	40 ✓
d4151-3 ✓	Chaque	d4151-3 upper hardpoint plate ✓	42 ✓

Comment: Net / 30 from date of invoice 2% svc. chg. on invoices over 30 days

Sp16-ai-01

THYSSENKRUPP MATERIALS NA

DART AEROSPACE

STAINLESS STEEL SHEET 304L-2B DUAL GRADE
1200 Nom X 48.0000" X 96.0000"
PART NO.

PO/Rel 31741

We certify that this is a true copy of the report
furnished by the producer of the metal, or data
resulting from tests made in approved labs.

Certificate of Mill Test Results

BL PEC-983229-002

21Mar16

Pg 1/1



METALLURGICAL TEST REPORT

North American Stainless Canada Inc.
740 Imperial Road North
Guelph, ON N1K1Z3
Canada

740 Imperial Road North

Certificate: 117938 1

Mail To:

THYSSENKRUPP MATERIALS

2821 LANGSTAFF ROAD

CONCORD, ON L4K5C6

Customer: 007206 001

Ship To:

THYSSENKRUPP MATERIALS

2821 LANGSTAFF ROAD

CONCORD, ON L4K5C6

Date: 11/26/2015 Page: 1

Steel: 304/304L

Finish: 2B

Corrosion: ASTM A262/14;180Bend-OK

Your Order: PEC271093

NAS Order: WN 0072789 07

PRODUCT DESCRIPTION:

STAINLESS STEEL COIL, C.R. ANNEALED & PICKLED. UNS 30400/30403
ASTM A240/15a, A480/14b, A666/15; ASME SA240/13, SA480/13, SA666/13
CHEM ONLY ON FOLLOWING ASTM: A276/13, A479/13a, A484/13a, A312/13
CHEM ONLY ON FOLLOWING ASME: SA312/13, SA479/13
AMS 5511H/5513J XMRK; MIL-5059D AMD3 (X CRN MEAS); MIL-4043B
NACE MR0175/ISO 15156-3:2009 A, MR0103/07; QQS766D-A X MAG PERM
MIN. SOLUTION ANNEAL TEMP 1900F, WATER QUENCHED

REMARKS:

Mat'l is Free of Mercury Contamination. No weld repairs.
EN 10204:2004 3.1; RoHS 1 & 2 Compliant
Material is Free of Radioactive Contamination
Steel Making Process: EAF, AOD, & Cont. Casting
Product Mfg. by a Quality Mgt. Sys. in Conf. w/ISO 9001
*Melted & Manufactured in the USA; Mat'l is DFARS Compliant

Product Id	Coil #	Skid #	Thickness	Width	Weight	Length	Mark	Pieces	Commodity Code
02X2A3 DA	02X2A3 D		.1163	48.0000	4.970	SHEETS	096.00	32	

Lab Accreditation Bureau, ISO/IEC 17025, Certificate# L2323

CHEMICAL ANALYSIS CM(Country of Melt) ES(Spain) US(United States) ZA(South Africa) JP(Japan)

Chemical Analysis per ASTM A751/08

HEAT	CM	C %	CR %	CU %	MN %	MO %	N %	NI %	P %	S %
X2A3	US	.0270	18.2380	.3950	1.7650	.3735	.0830	8.0045	.0340	.0010
SI %										
.2375										

MECHANICAL PROPERTIES

Product Id#	Coil #	UTS	20C .2% YS	20C ELONG	% Hard	Tail
		KSI	KSI	%-2"	RB	Hard
02X2A3 DA	02X2A3 D	F T	92.66	44.92	51.32	86.00
						87.00

NAS hereby certifies that the analysis on this certification is correct. Based upon the results and the accuracy of the test methods used, the material meets the specifications stated. These results relate only to the items tested and this report cannot be reproduced, except in its entirety, without the written approval of NAS.

Technical
Dept. Mgr.

ABHJEET BHAVE

ABHJEET BHAVE

11/26/2015

STAINLESS STEEL SHEET 304L-2B DUAL GRADE
.0750 Nom X 48.0000" X 120.0000"
PART NO.

We certify that this is a true copy of the report furnished by the producer of the metal, or data resulting from tests made in approved labs.

Pg 1/1

Signed by _____



No.600,Xinglong St., Jizxing 111, Gangshan Dist.,
Kaohsiung City 82057, Taiwan (R.O.C)

Specification/Steel Grade : DIN EN 10028-7 1.4301/1.4307_C
Surface Finish : No. 2B

1. We hereby certify that material described herein has been manufactured and tested with satisfactory results in accordance with the requirement of the above material specification.
2. The material described above has been detected with free irradiation.
3. INCON has established a QMS according to ISO 9001 which is certified by DNY CERT (reg.-no. 0058-2002-NQ-PGC-K11).
4. Inspection and gauge measurement: Satisfactory
5. The report can only be reproduced in full.
6. This certificate complies to 3.1/DIN EN 10204:2005.
7. The tests included: "Tensile Test", "Intergranular Attack" (I.A. TEST)
have been accredited by A2LA TESTING CERT #0058.02).

F. A. Huang

Doc No. 220730 Indexed 4Nov15 by slssup1